Lamna nasus (Porbeagle)

Priority 2 Species of Greatest Conservation Need (SGCN)

Class: *Chondrichthyes* (Sharks, Rays, And Skates)
Order: *Lamniformes* (Sharks, Skates, And Rays)
Family: *Lamnidae* (Mackerel Sharks)

General comments:

ESA species of Concern - Atlantic, Newfoundland, Canada to New Jersey
(Negative 12-month finding to list under the ESA, 78 FR 48943)

No Species Conservation Range Maps Available for Porbeagle

SGCN Priority Ranking - Designation Criteria:

Risk of Extirpation:
IUCN Red List Status: **Vulnerable**

State Special Concern or NMFS Species of Concern:
Lamna nasus is listed as a Species of Concern by the National Marine Fisheries Service.

Recent Significant Declines: NA
Regional Endemic: NA
High Regional Conservation Priority:
Committee on the Status of Endangered Wildlife in Canada (COSEWIC):
Status: E, Last Examination: 5/1/2014, Change: No Change, Canada Occurence: Atlantic Ocean
High Climate Change Vulnerability: NA
Understudied rare taxa: NA
Historical: NA
Culturally Significant: NA

Habitats Assigned to Porbeagle:

Formation Name **Subtidal**

Macrogroup Name **Subtidal Pelagic (Water Column)**

Habitat System Name: Nearshore ****Primary Habitat****

Habitat System Name: Offshore ****Primary Habitat****

Stressors Assigned to Porbeagle:

Stressor Priority Level based on Severity and Actionability

	Moderate Severity	High Severity
Highly Actionable	Medium-High	High
Moderately Actionable	Medium	Medium-High
Actionable with Difficulty	Low	Low

IUCN Level 1 Threat **Biological Resource Use**

IUCN Level 2 Threat: Fishing and Harvesting of Aquatic Resources

Severity: Severe **Actionability:** Moderately actionable

Notes: The probeagle sharks (like other elasmobranchs) are highly vulnerable to exploitation because of their k-selective life histories (i.e. slow growth rates, late maturity, low fecundity). The main threat to this shark is unsustainable fisheries both targeted (ie. longline, gillnet, driffnet fisheries) and bycatch (i.e. occurs in the tuna and swordfish fisheries). These fish are prized for their high value meat. As a result, porbeagle populations are seriously depleted and will require greatly reducing fishing mortality in order to recover. Currently this species is regulated under the highly migratory species act and fishing effort is controlled through license limitations. In addition, finning has also been banned. As such, it's important to continue to assess how commerical fisheries are impacting these sharks, so practices can continue to be altered to prevent this species from being overexploited.

Lamna nasus (Porbeagle)

Priority 2 Species of Greatest Conservation Need (SGCN)

Class: *Chondrichthyes* (Sharks, Rays, And Skates)
Order: *Lamniformes* (Sharks, Skates, And Rays)
Family: *Lamnidae* (Mackerel Sharks)

IUCN Level 1 Threat **Human Intrusions and Disturbance**

IUCN Level 2 Threat: Recreational Activities

Severity: Moderate Severity **Actionability:** Moderately actionable

Notes: The recreational fishing industry significantly contributes to the Maine economy, however the impacts of recreational fishing on shark populations is not well studied and is typically difficult to detect. In particular, porbeagles, due to their aggressiveness when captured, are very popular gamefish. In addition, they are also sought after because of their high quality meat. Currently the number of recreationally captured probeagles are tightly regulated in US waters. However, research must be done to accurate assess the impact this fishery may have on the probeagle.

IUCN Level 1 Threat **Pollution**

IUCN Level 2 Threat: Industrial and Military Effluents

Severity: Moderate Severity **Actionability:** Moderately actionable

Notes: Shark species use inshore coastal and estuarine habitats as a safe place for finding food, giving birth and growing up away from predators and competitors. This means that they are vulnerable to negative changes in their habitat. For example, sharks, skates and rays are very susceptible to pollution and environmental contamination. Pollution in the ocean has either filtered from land activities or has been directly deposited into the seas. As apex predators with slow growth, they accumulate all the pollutants and toxins in the environment and bioaccumulating all the toxins of their prey. Chemical pollution, in the form of mercury, DDT, organochlorines, etc., has been documented in several shark populations in close proximity to areas of human populations. This could become a significant threat as we learn more about movement patterns and habitat usages of skates

IUCN Level 1 Threat **Climate Change and Severe Weather**

IUCN Level 2 Threat: Habitat Shifting or Alteration

Severity: Severe **Actionability:** Actionable with difficulty

Notes: Climate driven increases in ocean temperature are occurring and will have long-term effects on global fisheries. Consequently, the first acclimatizing response to temperature variations in fishes is typically to shift spatial distribution in order to stay within there ideal thermal tolerance range. Particularly it's expected "cold-water" fish species ranges are anticipated to be reduced. Thus, more research is needed to better understanding the genetic and physiological sensitivity of skates to climate change. In addition, it will also be important to determine how temperature changes will alter distribution in common prey items. Ocean acidification could also have an impact on eggcase structure/integrity, which could significantly affect the success/recovery of these populations. However, more research is needed

IUCN Level 2 Threat: Temperature Extremes

Severity: Moderate Severity **Actionability:** Actionable with difficulty

Notes: Shift in ocean temperatures will influence how a species moves and travels as well as their food sources; warmer surface waters also affect the distribution of essential nutrients

IUCN Level 1 Threat **Other Options**

IUCN Level 2 Threat: Lack of knowledge

Severity: Severe **Actionability:** Actionable with difficulty

Notes: In general, there is a significant lack of updated/accurate life history information and movement data for this species (throughout their range and for various life stages). In order to effectively manage this species in the future, a thorough understanding of their basic biology and critical habitats are essential

Species Level Conservation Actions Assigned to Porbeagle:

Lamna nasus (Porbeagle)

Priority 2 Species of Greatest Conservation Need (SGCN)

Class: *Chondrichthyes* (Sharks, Rays, And Skates)
Order: *Lamniformes* (Sharks, Skates, And Rays)
Family: *Lamnidae* (Mackerel Sharks)

Only species specific conservation actions that address high (red) or medium-high (orange) priority stressors are summarized here.

Conservation Action **Category:** Research **Biological Priority:** critical **Type:** new
Determine the location and timing of important habitat use at different life history stages

Stressor(s) Addressed By This Conservation Action

Fishing and Harvesting of Aquatic Resources

Conservation Action **Category:** Research **Biological Priority:** critical **Type:** new
Identify methods to reduce incidental bycatch by recreational anglers

Stressor(s) Addressed By This Conservation Action

Fishing and Harvesting of Aquatic Resources

Conservation Action **Category:** Research **Biological Priority:** critical **Type:** new
Develop an improved understanding of discard mortality rates

Stressor(s) Addressed By This Conservation Action

Fishing and Harvesting of Aquatic Resources

Guild Level Conservation Actions:

This Species is currently not attributed to a guild.

Broad Taxonomic Group Conservation Actions:

Additional relevant conservation actions for this species are assigned within broader taxonomic groups in Maine's 2015 Wildlife Action Plan: Element 4, Table 4-1.

Habitat Based Conservation Actions:

Additional conservation actions that may benefit habitat(s) associated with this species can be found in Maine's 2015 Wildlife Action Plan: Element 4, Table 4-15. Click on the Habitat Grouping of interest to launch a habitat based report summarizing relevant conservation actions and associated SGCN.

The Wildlife Action Plan was developed through a lengthy participatory process with state agencies, targeted conservation partners, and the general public. The Plan is non-regulatory. The species, stressors, and voluntary conservation actions identified in the Plan complement, but do not replace, existing work programs and priorities by state agencies and partners.